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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/812,566

03/29/2004

Tsau-Hua Hsieh

3672

25859

7590

12/27/2005

WEI TE CHUNG

FOXCONN INTERNATIONAL, INC.

1650 MEMOREX DRIVE

SANTA CLARA, CA 95050

EXAMINER

CALEY, MICHAEL H

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 12/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/812,566	Applicant(s) HSIEH ET AL.	
	Examiner Michael H. Caley	Art Unit 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,5,8-14 and 16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5,8-14 and 16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 5, 8, 9, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park (U.S. Patent No. 5,949,511) in view of Yano et al. (U.S. Patent No. 6,108,068 “Yano”).

Regarding claim 1, Park discloses an IPS liquid crystal display having:

- a first substrate (Figure 4A element 111);
- a second substrate (Figure 4A element 110) opposite to the first substrate;
- a liquid crystal layer (Figure 4A element 119) disposed between the two substrates;
- a plurality of common electrodes (Figure 4A element 106A) and pixel electrodes (Figure 4A element 105A) disposed on the second substrate;
- a plurality of spacers (Figure 4A element 130) disposed on the common electrodes and the pixel electrodes;
- wherein the spacers are electrically conductive (Column 3 lines 40-43).

Park discloses all of the proposed limitations except for the spacers as made of an anisotropic conductive film. Yano, however, teaches such a film for forming a spacer capable of bonding the first and second substrate in an electroconductive state (Figures 5 and 7; Column 4 lines 1-34).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the spacer from an anisotropic conductive film as proposed. One would have been motivated to form the spacer from an anisotropic conductive film to aid in fixing the substrate and reduce flicker (Column 1 lines 35-64, Column 4 lines 50-60).

Regarding claim 5, Park discloses the spacers as having a circular cross-section (Figure 4A element 130).

Regarding claim 8, Park discloses a plurality of counter electrodes (Figure 4A elements 105B and 106B) disposed between the spacers and the first substrate.

Regarding claims 9, 13, and 16, Park discloses all of the proposed limitations except for the spacers as having a spacer body and an electrically conductive film. Yano, however, teaches such a spacer construction for forming a spacer capable of bonding the first and second substrate in an electroconductive state (Figures 5 and 7; Column 4 lines 1-34) while having a spacer portion having high hardness for determining the liquid crystal thickness (Column 3 lines 59-67).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the spacer from an anisotropic conductive film as proposed. One

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would have been motivated to form the spacer from an anisotropic conductive film to aid in fixing the substrate and reduce flicker (Column 1 lines 35-64, Column 4 lines 50-60).

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Park in view of Yano and in further view of Shimoshikiryo et al. (U.S. Patent No. 6,130,739 “Shimoshikiryo”).

Park as modified by Yano discloses all of the proposed limitations except for the spacers as having a rectangular cross-section. Shimoshikiryo, however, teaches the spacers as having a rectangular cross-section such that the spacer creates a transverse field across the length of the pixel electrode and common electrode (Figures 6-8 elements 603 and 604).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the spacers disclosed by Park to have a rectangular cross-section as proposed. One would have been motivated to shape the spacers as taught by Shimoshikiryo to benefit from a lower driving voltage due to a higher transverse electric field strength (Column 28 lines 21-40). A lower driving voltage would have been beneficial to increase the driving efficiency of the display.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Park in view of Yano and in further view of Shimoshikiryo.

Park as modified by Yano discloses all of the proposed limitations except for the spacers as having a rectangular cross-section. Shimoshikiryo, however, teaches the spacers as having a

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rectangular cross-section such that the spacer creates a transverse field across the length of the pixel electrode and common electrode (Figures 6-8 elements 603 and 604).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the spacers disclosed by Park to have a rectangular cross-section as proposed. One would have been motivated to shape the spacers as taught by Shimoshikiryo to benefit from a lower driving voltage due to a higher transverse electric field strength (Column 28 lines 21-40). A lower driving voltage would have been beneficial to increase the driving efficiency of the display.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Park in view of Yano and Shimoshikiryo and in further view of Shimizu et al. (U.S. Patent No. 4,390,245 "Shimizu").

Park as modified by Yano and Shimoshikiryo fails to disclose the spacer body as made of glass. Yano teaches the spacer body as having a comparatively high hardness to decide the thickness of the liquid crystal layer (Column 3 lines 59-67). Shimizu further teaches glass as a preferable hard material to decide the thickness of the liquid crystal layer (Column 2 lines 37-43).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used glass as the spacer body material in the display device disclosed by Park. One would have been motivated to use a glass spacer body due to its recognized ability to define and maintain a distance between substrates and thus determine the thickness of the liquid crystal layer (Shimizu, Column 2 lines 65-66).

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Park in view of Yano and in further view of Shimizu et al. (U.S. Patent No. 4,390,245 "Shimizu").

Park as modified by Yano fails to disclose the spacer body as made of glass. Yano teaches the spacer body as having a comparatively high hardness to decide the thickness of the liquid crystal layer (Column 3 lines 59-67). Shimizu further teaches glass as a preferable hard material to decide the thickness of the liquid crystal layer (Column 2 lines 37-43).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used glass as the spacer body material in the display device disclosed by Park. One would have been motivated to use a glass spacer body due to its recognized ability to define and maintain a distance between substrates and thus determine the thickness of the liquid crystal layer (Shimizu, Column 2 lines 65-66).

Response to Arguments

Applicant's arguments filed 10/12/05 have been fully considered but they are not persuasive.

Regarding the rejection of claims 1, 2, 5, 8-14, and 16, Applicant argues that neither Park nor Yano teaches or suggests providing an IPS liquid crystal display comprising a spacer of an anisotropic conductive film or a spacer body with an electrically conductive film around the spacer body made of an anisotropic conductive film. The examiner, however maintains that Yano teaches each of these elements.

The spacer taught by Yano comprises a hard kernel portion (13a) surrounded by an electrically conductive hull portion (13b). When the spacer is brought into contact with upper and lower substrates, the conductive hull portion is deformed and made to vertically conduct between the upper and lower substrates (Column 4 lines 1-13; Figures 4 and 5). Both the spacer and the conductive film around the spacer body are considered to be an anisotropic conductive film given their function of conducting in only the vertical direction between the upper and lower substrates. Furthermore, Yano specifically cites such a spacer as especially advantageous for use in an IPS display (Column 4 lines 45-62).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael H. Caley whose telephone number is (571) 272-2286. The examiner can normally be reached on M-F 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael H. Caley
December 22, 2005


mhc


ANDREW SCHECHTER
PRIMARY EXAMINER